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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/585,761	06/02/2000	Thomas D. Barber	20.2743	5864

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SCHLUMBERGER OILFIELD SERVICES
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SUGAR LAND, TX 77478

EXAMINER

CRAIG, DWIN M

ART UNIT	PAPER NUMBER
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2123

DATE MAILED: 07/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/585,761

Applicant(s)

BARBER, THOMAS D.

Examiner

Dwin M Craig

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 5/5/2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 3-10, 12-19, 21-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-10, 12-19 and 21-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1, 3-10, 12-19 and 21-26 have been presented for reconsideration based on Applicant's Request for Continued Examination (RCE) under 37 CFR 1.1114 Claims 2, 11 and 20 have been cancelled.

Response to Arguments

2. The Examiner notes that Applicant's have opined, *see the 2/01/2005 responses that* the amended claim language is allowable over the prior art rejections presented by the Examiner. The Examiner notes that Applicant has added the express limitation that there is data correlation going on between the logged data and the simulated or modeled data. The Examiner respectfully notes that these limitations are already disclosed by the *Strickland et al.* reference. For the sake of clarity the Examiner has modified the previous prior art rejection to reflect the fact that previously cited reference already discloses the claimed limitation of data correlation.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

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4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
3. Independent **Claims 1, 10 and 19** and dependent **Claims 3-9, 12-18 and 21-26** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Strickland et al. U.S. Patent 5,867,806** in view of **Howells et al. U.S. Patent 4,556,884**.

3.1 As regards independent **Claims 1, 10 and 19** the *Strickland et al.* reference discloses, a method of determining a characteristic of a subsurface earth formation surrounding a borehole (**Figures 1, 4A-C, 5-13, Col. 1 Lines 20-34**), calculating at least one parameter representative of a property of the formation using log data obtained with a first well tool (**Figure 2**), disposed within a bore hole (**Figure 1, Figure 4C ITEM 220**), modeling log data from at least one calculated parameter (**Figure 4C ITEM 226**), comparing log data against the modeled log data to determine the formation characteristic (**Figure 4B ITEM 218**) further, it is noted by the Examiner that in fact when comparing log data, *i.e. empirical data*, with the simulated data, *i.e. the modeled data*, then a correlation between the empirical and modeled data is taking place.

However the *Strickland et al.* reference does not expressly disclose a second well tool disposed in the borehole.

The *Strickland et al.* reference discloses that there is a need in the art for a method to reduce “*shoulder effect*” (**Strickland et al. Col. 2 Lines 4-18**). An artisan of ordinary skill, would have been motivated to search the related borehole measurement art to find a method of measuring resistive characteristics in order to overcome the express deficiencies of the *Strickland et al.* reference in regards to teaching the use of a second well tool disposed in the

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borehole. In the borehole measurement art the *Howells et al.* reference discloses using a second well tool in the borehole (**Col. 25 Lines 37-49**).

Thus, it would have been obvious, to one of ordinary skill in the art, at the time the invention was made, to have combined the borehole measurement methods of the *Strickland et al.* reference with the borehole measurement methods of the *Howells et al.* reference because, by combining the induction log and laterolog methods of measurement only one pass of the tool must be performed in order to get both types of measurements performed (*Howells et al.* **Col. 25 Lines 50-68**).

3.2 As regards dependent **Claims 3, 12 and 21** the *Strickland et al.* reference discloses calculating a ratio (**Col. 12 Lines 16-22**).

3.3 As regards dependent **Claims 4, 13 and 22** the *Strickland et al.* reference discloses calculating a difference (**TABLE 1 and 2**).

3.4 As regards dependent **Claims 5 and 14** the *Strickland et al.* reference discloses multiplying by a factor (**Col. 17 Lines 60-65** *note, convolution is a form of multiplication*).

3.5 As regards dependent **Claims 6, 7, 15, 16, 23 and 24** the *Strickland et al.* reference does not expressly disclose using a laterolog or induction type borehole-logging tool.

The *Howells et al.* reference discloses using a laterolog and induction type borehole logging tool in the borehole (**Col. 25 Lines 37-49**).

It would have been obvious, to one of ordinary skill in the art, at the time the invention was made, to have combined the teachings of the *Strickland et al.* reference with the teachings of the *Howells et al.* reference because, the usage of the laterolog and induction type borehole measurement tools is known in the art and provides two different methods of measuring

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resistivity of a borehole and therefore provides an improved method of determining the presence of oil (*Howells et al. Col. 6 Lines 51-54*).

3.6 As regards dependent **Claims 8, 17 and 25** the *Strickland et al.* reference discloses resistivity (**Figure 4C ITEM 222**).

3.7 As regards dependent **Claims 9 and 18** the *Strickland et al.* reference discloses performing the measurements during drilling (**Figures 1, 1A and 2**).

3.8 As regards dependent **Claim 26** the *Strickland et al.* reference discloses storage device and a processor (**Figure 3, ITEM 110**).

Conclusion

4. Claims 1, 3-10, 12-19 and 21-26 have been presented for reconsideration in view of Applicants Request for Continued Examination (RCE). **Claims 1, 3-10, 12-19 and 21-26** have been rejected.

4.1 The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. **U.S. Patent 4,916,616** discloses methods of interpreting log data (**ABSTRACT**). "The Role of Well Logs in Reservoir Modeling" discloses how well log data is compared with modeled data (**INTRODUCTION page 3**).

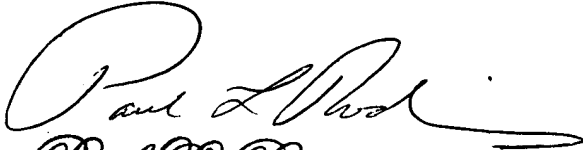
4.2 Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. This Office Action is **Non-Final**.

4.3 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dwain M. Craig whose telephone number is (571) 272-3710. The examiner can normally be reached on 10:00 - 6:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo P. Picard can be reached on (571) 272-3749. The fax phone number for the organization where this application or proceeding is assigned is 571 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DMC


Paul L. Rodriguez 7/25/05
Primary Examiner
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